DEQ
Montana Department
of Environmental Quality

June 12, 2015

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Madison County Commissioners, PO Box 278, Virginia City, MT 59755
Director, Department of Fish, Wildlife & Parks, 1420 E 6th Ave, Helena, MT 59620
Lisa Peterson, DEQ, Director's Office, Helena, MT 59620
Jon Kenning, DEQ, Water Protection Bureau, Helena, MT 59620
Environmental Quality Council, Capitol Complex, Helena, MT 59620
Documents Section, State Library, Capitol Complex, Helena, MT 59620
South West Septic, PO Box 122, Alder, MT 59710
Carlson Land & Cattle LLC, 28 Carlson Ln, Twin Bridges, MT 59754
Ruby Mountain Hay & Grain INC. 208 Barney Ln, Twin Bridges, MT 59754
Morse Land Company LLC, PO Box 638, Sheridan, MT 59749

Ladies and Gentlemen:

To comply with the Administrative Rules of Montana, 17.4.607(2) and 17.4.609(2), the Department of Environmental Quality (DEQ), prepared the enclosed Environmental Assessment (EA). The attached EA is for the land application of septage and graywater in Madison County, Montana.

The purpose of the EA is to inform the public of the proposed action and to seek public participation in the decision-making process. Persons wishing to comment have until the close of business on July 12, 2015, to submit written comments concerning the proposal. DEQ will not make a final decision until after the comment period has ended.

If you wish to comment on this proposed action during the comment period, please do so in writing by mailing your comments to the Waste and Underground Tank Management Bureau, Solid Waste Program, P.O. Box 200901, Helena, MT 59620-0901 or by Email to mailbox *deqwutbcomments@mt.gov*.

Sincerely,

Bob McWilliams

Bob McWilliams
Environmental Science Specialist
Waste & Underground Tank Management Bureau

Enclosure: EA – South West Septic

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Waste and Underground Tank Management Bureau
Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

ENVIRONMENTAL ASSESSMENT

SECTION 1.0 – SOLID WASTE SECTION ROLES AND RESPONSIBILITIES:

The Department of Environmental Quality (DEQ), Solid Waste Section (SWS), is responsible for ensuring activities proposed under the Solid Waste Management Act, the Integrated Waste Management Act (SWMA), the Septage Disposal Licensure Act, and the Motor Vehicle Disposal & Recycling Act are in compliance with current regulations. The SWS is a part of DEQ's Permitting and Compliance Division, Waste and Underground Tank Management Bureau. The SWMA (75-10-201, MCA), the Septage Disposal and Licensure Law, and the Administrative Rules of Montana (ARM), Title 17, Chapter 50 for Cesspool, Septic Tank, and Privy Cleaners, provide the necessary authority for the SWS to license and regulate septic tank pumpers in the state of Montana. A land application site must first be approved by the county in which the site is located before the request for approval is submitted to the SWS for review and approval. Each licensee is responsible for complying with the regulations and other restrictions and/or requirements put in place by the county in which the land application site is located.

Purpose of the Environmental Assessment:

In accordance with 75-1-102, Montana Code Annotated (MCA), the Montana Environmental Policy Act (MEPA) is procedural and requires the "adequate review of state actions in order to ensure that environmental attributes are fully considered by the legislature in enacting laws to fulfill constitutional obligations; and the public is informed of the anticipated impacts in Montana of potential state actions." According to MEPA, an Environmental Assessment (EA) is a procedural document that communicates the process agencies follow in their decision-making. An EA does not result in a certain decision; but rather, it serves to identify the potential effect of a state action within the confines of existing laws and rules governing such proposed activities so that agencies make balanced decisions. The MEPA process does not provide regulatory authority beyond the authority explicitly provided in the existing statute.

The Septage Disposal and Licensure regulations establish the minimum requirements for the land application of septage wastes. The EA is the mechanism that DEQ uses to determine whether a proposed land application site meets the minimum requirements for compliance with the current laws and rules and is therefore licensable as proposed, assist the public in understanding the licensing laws of the Septage Disposal and Licensure program, identify and discuss the potential environmental effects of the proposed land application activity if it is approved and becomes operational, discuss actions taken by the applicant and the enforceable measures and conditions of the license designed to mitigate the effects identified by DEQ during the review of the application, and seek public input to ensure DEQ has identified all the substantive environmental effects associated with the proposed land application of pumpings on the proposed property.

Benefits and Purpose of Project:

The land application of domestic septage is an economical and environmentally sound practice. A properly managed land application program provides benefits to agricultural land by the addition of moisture, organic matter and nutrients to the soil without adversely affecting public health. The land application of septage and gray water at this site will add nutrients, moisture, and improve the soil tilth for the continued production of agricultural pasture grasses.

SECTION 2.0 – PROJECT DESCRIPTION:

Ray Smail of South West Septic (applicant) has submitted an application for approval of a site for the land application of septage and graywater on 150-acres of private property located in Madison County owned by Carlson Land and Cattle. At the present time, the property is being used for production of pasture grasses. Land application will occur at this site only as-needed.

Site Location:

The proposed land application site is located on private property in Section 1, Township 5 South, Range 6 West, Montana Principal Meridian, and Madison County, Montana (Figure 2.1). The areas proposed for land application are located in the NE/4 of the NE/4 of the NE/4 of the SW/4, the SW/4 of the SW/4 of the NE/4, the NW/4 of the SE/4, the SW/4 of the SE/4, the SW/4 of the SE/4 of the SE/4, the SE/4 of the SE/4 of the NW/4, the N/2 of the SE/4 of the NW/4, the W/2 of the NE/4 of the NW/4, the SE/4 of the NE/4 of the NW/4, the NE/4 of the NW/4 of the NW/4, the E/2 of the NW/4 of the NW/4, the NE/4 of the NW/4 of the NW/4 of the NW/4, the E/2 of the NE/4 of the SE/4, and the N/2 of the SE/4 of the NE/4 (Figure 2.2) Figures 2.3 through 2.6 provide photographs of the sites proposed for land application that were taken during DEQ's site visit.

Figure 2.1: Proposed Land Application Site Location

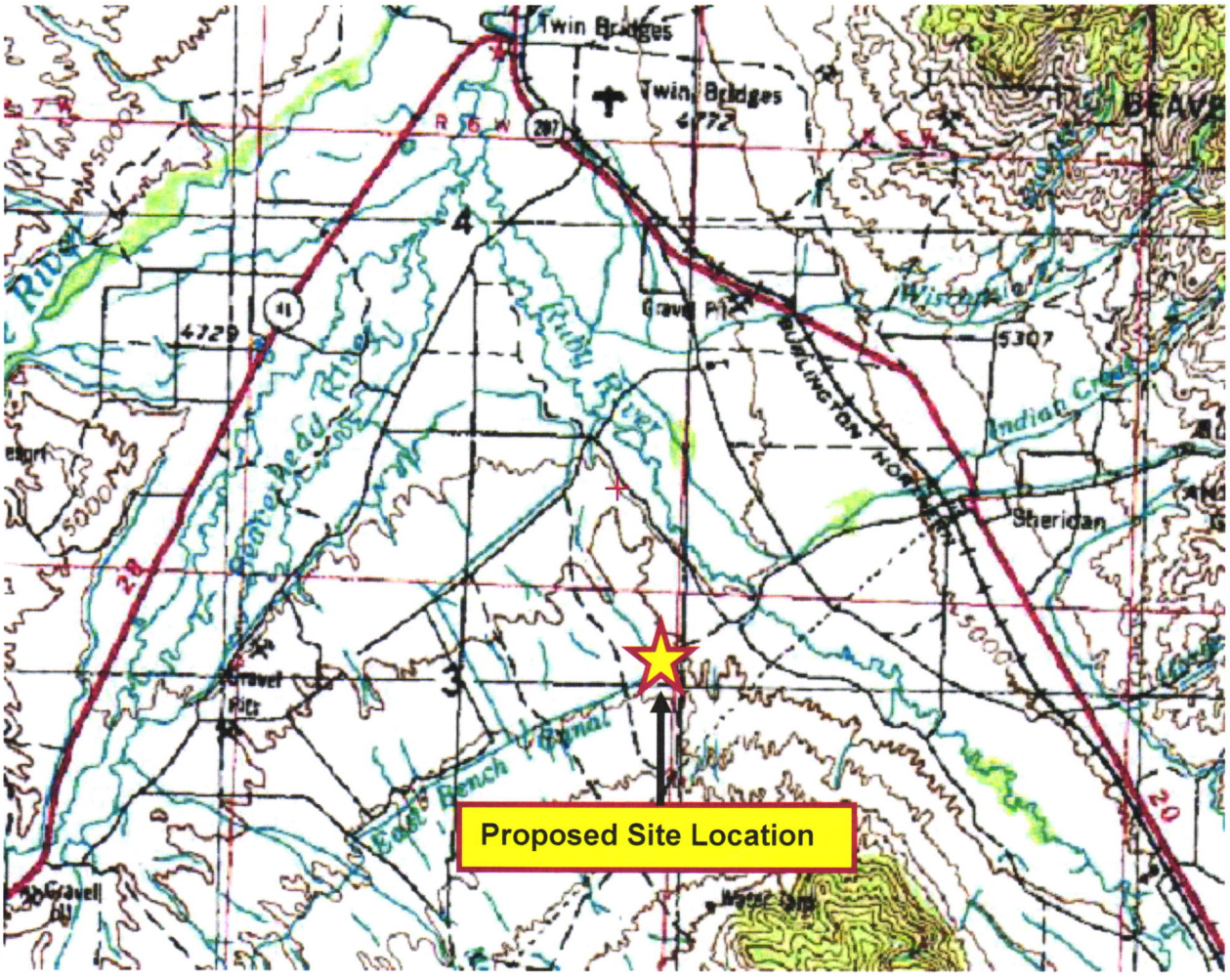


Figure 2.2: Map of Land Application Site Boundaries (outlined in red).

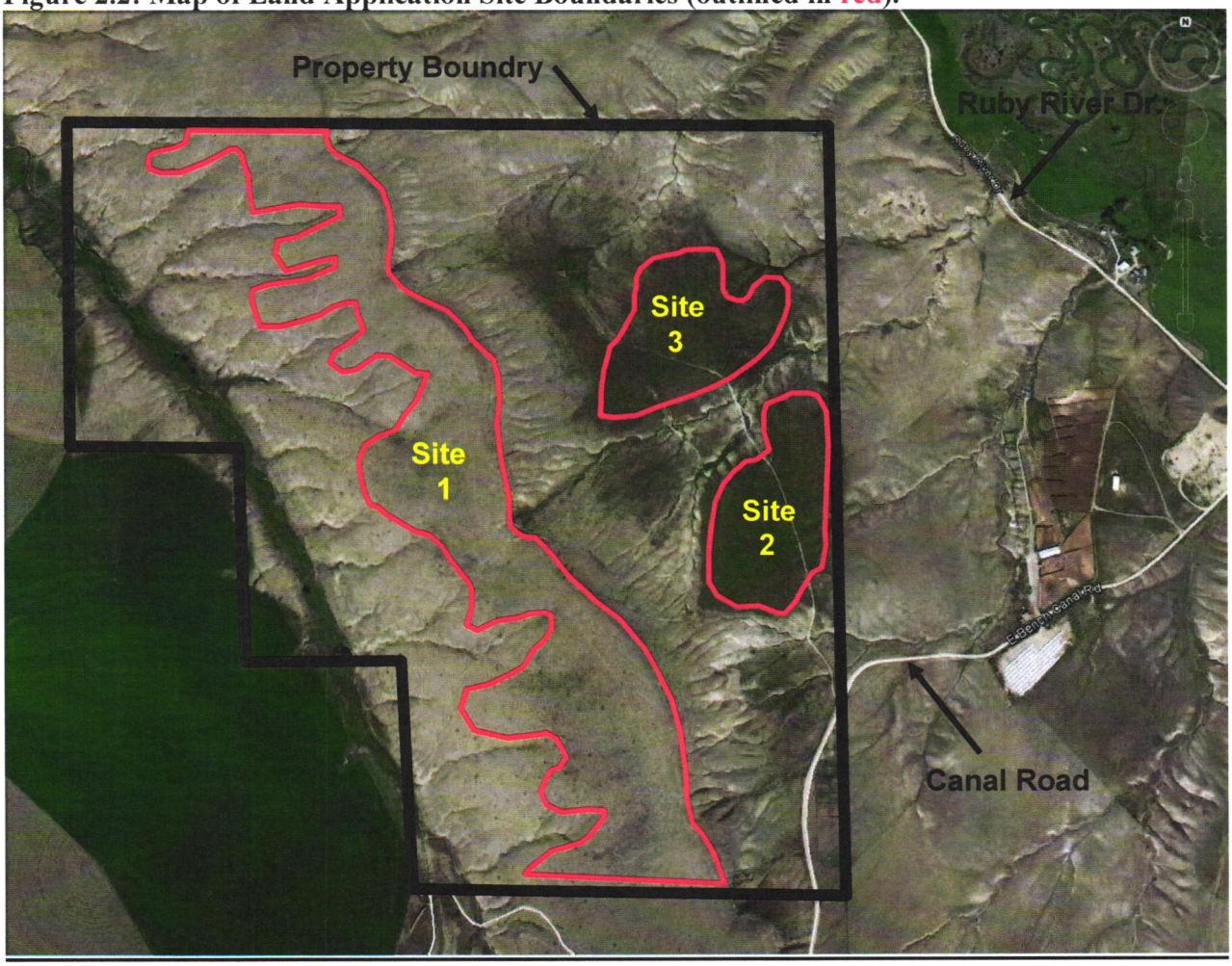


Figure 2.3: Photograph of Site 1 (taken on site looking towards the west, outlined in red)

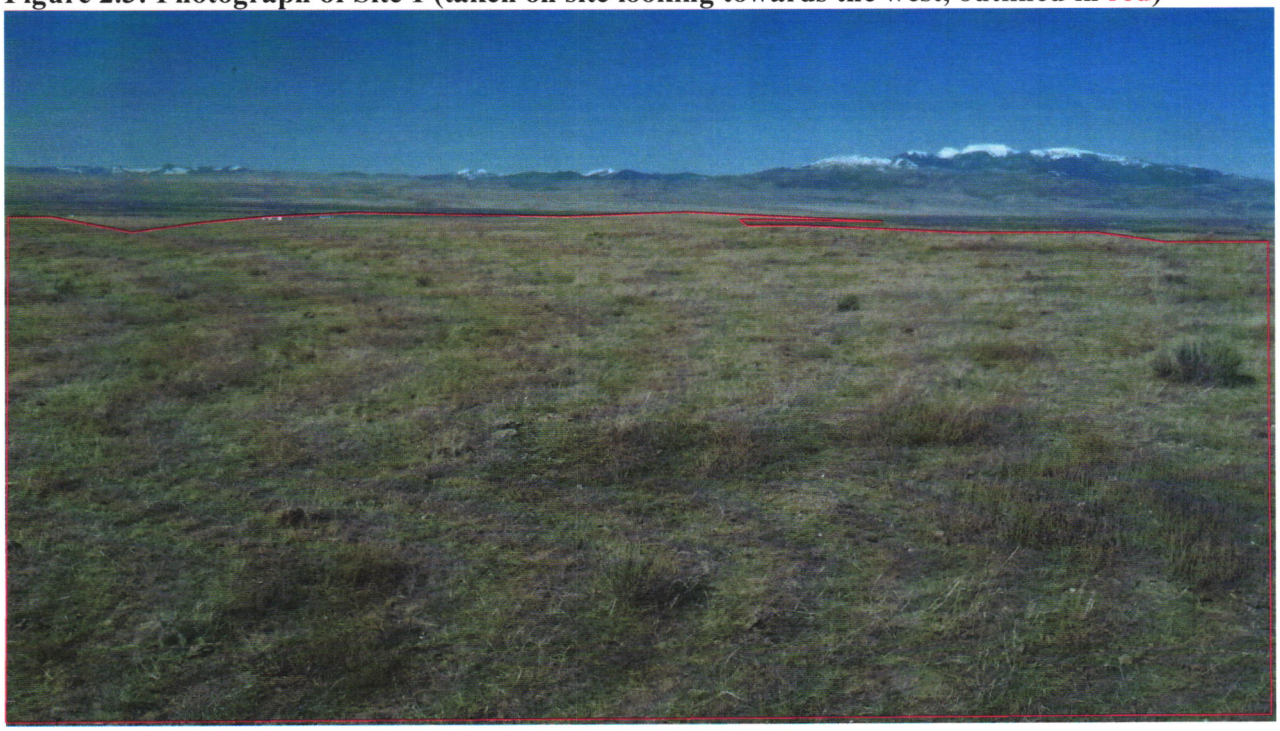
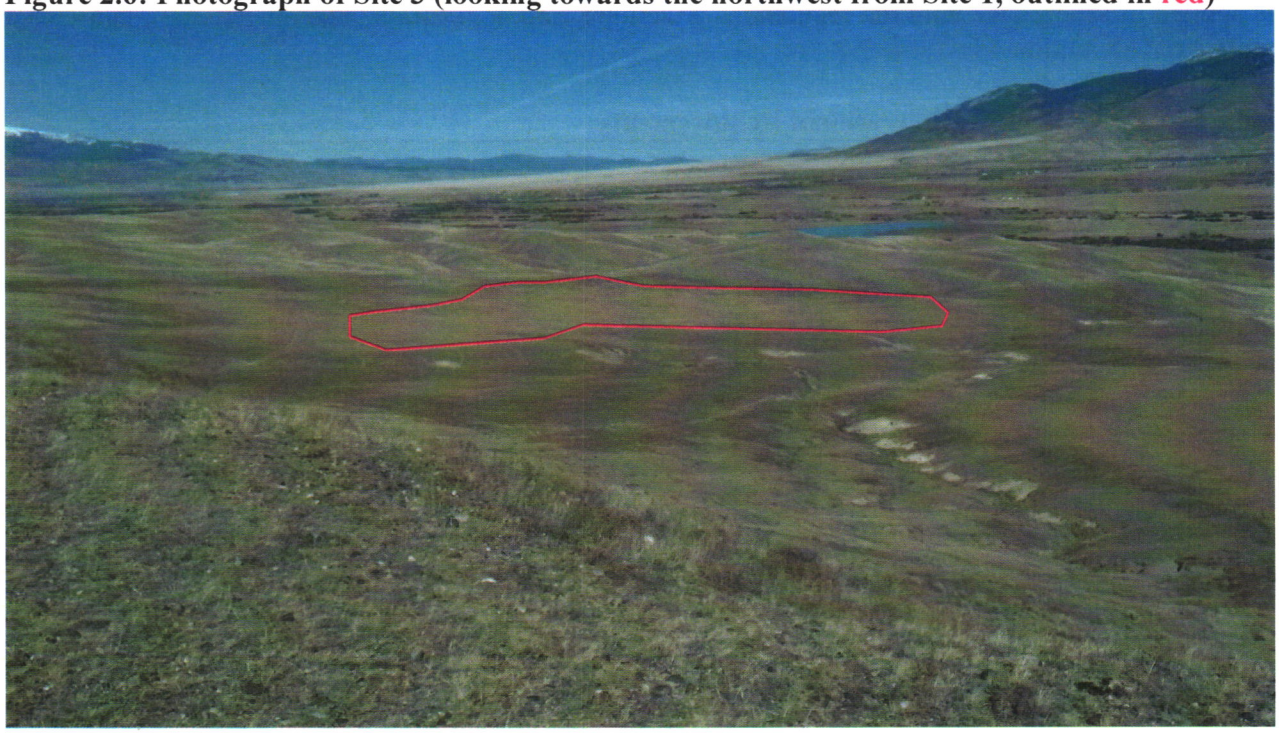


Figure 2.4: Photograph of Site 1 (taken on site looking towards the east, outlined in red)

Figure 2.5: Photograph of Site 2 (looking towards the north from Site 1, outlined in red)

Figure 2.6: Photograph of Site 3 (looking towards the northwest from Site 1, outlined in red)



Site Setback Requirements:

The setbacks noted in Table 2.1 must be maintained by the applicant during land application activities.

Table 2.1: Land Application Site Setback Requirements

ARM Reference	Setback Requirements
17.50.809(1)	Pumpings may not be applied to land within 500 feet of any occupied or inhabitable building.
17.50.809(2)	Pumpings may not be applied to land within 150 feet of any state surface water, including ephemeral or intermittent drainages and wetlands.
17.50.809(3)	Pumpings may not be applied to land within 100 feet of any state, federal, county, or city-maintained highway or road.
17.50.809(4)	Pumpings may not be applied to land within 100 feet of a drinking water supply source.
17.50.809(6)	Pumpings may not be applied to land with slopes greater than 6%.
17.50.809(8)	Pumpings may not be applied to land where seasonally high ground water is 6 feet or less below ground surface.

Site Operation and Maintenance Requirements:

The land application of septage and graywater is considered the beneficial use of a waste product when the material is applied in accordance with the regulations governing land application. The operational requirements for land application are outlined in Table 2.2.

Table 2.2: Land Application Site Operational Requirements

ARM Reference	Site Restrictions/Requirements
17.50.809(10)	All non-putrescible litter must be removed from the land application site within 6 hours of application.
17.50.809(12)	Pumpings may not be applied at a rate greater than the annual application rate (AAR) of the site for crop nitrogen requirement on an annual basis.
17.50.810(1)	Pumpings may not be applied to flooded, frozen, or snow covered ground if the Pumpings may enter state waters.
17.50.811(3)	Pumpings may be applied only if the person first performs one of the following vector attraction and pathogen reduction methods: • injection below the land surface so no significant amount remains on the land surface within one-hour of injection; • incorporation into the soil surface plow layer within 6 hours of application; • addition of alkali material so that the pH is raised to and remains at 12 or higher for a period of at least 30 minutes; or, • management as required by 17.50.810 when the ground is frozen

The acreage available for land application will be rotated on an annual basis, so that parcels used for land application one year will be actively cropped the next year. This rotation allows the vegetation or crop of choice to utilize the nitrogen and other nutrients added from the land application process.

Pumpings will be land applied using a dispersive mechanism, consisting of either a spreader bar or a splash plate. The dispersive mechanism applies the waste in a wide, thin, even layer at a beneficial rate. Pumpings will be incorporated into the soil surface plow layer with a tractor and tillage equipment within six-hours of application.

Land application will occur as needed at a rate not exceeding the AAR in gallons per acre. For septage the AAR is calculated based upon the production of a specific crop or grass, as follows:

AAR = Crop Nitrogen Requirement/0.0026 for septage waste.

In this case, the landowner currently uses the property for the production of pasture grasses. The pasture grass at this location has a nitrogen requirement of 25 pounds/acre. The resulting AAR for septage application is 9,615 gallons per acre, and is equal to approximately 0.35 inches of liquid per acre per year. For comparison, the average annual precipitation received during the month of November is approximately what would be land applied per acre per year at the proposed site (see Table 2.3).

Site Climate:

The climate in the area proposed for land application is typical of the semi-arid regime in the Twin Bridges area. Table 2.3 provides a summary of monthly climate information. The winters in the Twin Bridges area are long and moderately snowy; the summers are hot and dry. The average annual precipitation is approximately 9.62 inches. The majority of precipitation falls during the months of May and June, while February is the driest month.

Table 2.3: Monthly Climate Summary

TWIN BRIDGES, MONTANA (248430)
Period of Record Monthly Climate Summary
Period of Record : 6/ 1/1950 to 12/31/2005

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	34.4	40.3	47.6	57.1	66.9	75.1	84.1	82.2	72.2	60.6	44.1	35.3	58.3
Average Min. Temperature (F)	11.2	14.8	20.5	27.6	35.6	42.3	45.8	43.1	35.3	27.3	19.1	12.4	27.9
Average Total Precipitation (in.)	0.26	0.21	0.45	0.84	1.71	1.94	1.04	1.01	0.94	0.55	0.37	0.28	9.62
Average Total SnowFall (in.)	1.7	1.9	2.1	0.8	0.1	0.0	0.0	0.1	0.0	0.3	1.1	0.9	9.1
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

(Source: Western Regional Climate Center)

SECTION 3.0 – ALTERNATIVES CONSIDERED:

The following provides a description of reasonable alternatives whenever alternatives are reasonably available and prudent to consider:

A decision by DEQ is triggered when the applicant upholds the request for licensure of the proposed activity at the proposed location. The applicants, however, may at any time choose to withdraw the application. This would result in the DEQ selecting the "no action" alternative, because a DEQ decision would not be necessary.

Alternative A: The "no action" alternative. This alternative will be implemented when a final decision by DEQ is not required because the applicant has chosen to withdraw the application for approval of the land application site.

Alternative B: The 'license application denied' alternative. This alternative will be implemented and DEQ will deny the new disposal site application if the application failed to meet the minimum requirements of the Septage Disposal Licensure Act and could not continue to be processed as submitted. If denied, the applicant has the option to modify the application for the current site and reapply for licensure, or could locate, investigate, and apply for licensure of another site.

Alternative C: The 'license application approved' alternative. This alternative will be implemented and DEQ will approve the application for licensure of the new disposal site if the application meets the requirements of the Septage Disposal Licensure Act.

In consideration of these alternatives, DEQ has not received a request by the applicant to withdraw the application for licensure. In addition, DEQ has determined the application meets the requirements of the Septage Disposal and Licensure Laws. Therefore, the potential environmental effects of Alternative C were evaluated for the proposed project based on the information provided, DEQ's research on the site and area surrounding the proposed site, and DEQ's site visit. The results of DEQ's evaluation of potential environmental effects related to the proposed facility are summarized in Section 4.0.

SECTION 4.0 - EVALUATION OF POTENTIAL EFFECTS

Tables 4.1 and 4.2 of this section identify and evaluate the potential environmental effects that may occur to human health and the environment if the land application site is approved. The discussion of the potential impacts only includes those resources potentially affected. If there is no effect on a resource, it may not be mentioned in the analysis.

Direct and indirect impacts are those effects that occur in or near the proposed project area and might extend over time. Often, the distinction between direct and indirect effects is difficult to define, thus in the following discussion, impact or effect means both types of effects.

TABLE 4.1 - IMPACTS TO THE PHYSICAL ENVIRONMENT

PHYSICAL ENVIRONMENT	Major	Moderate	Minor	None	Unknown	Attached
1. TERRESTRIAL, AND AQUATIC LIFE AND HABITATS				✔		✔
2. WATER QUALITY, QUANTITY & DISTRIBUTION				✔		✔
3 GEOLOGY				✔		✔
4. SOIL QUALITY, STABILITY, AND MOISTURE			✔			✔
5. VEGETATION COVER, QUANTITY & QUALITY			✔			✔
6 AESTHETICS				✔		✔
7. AIR QUALITY				✔		
8. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES			✔			✔
9. HISTORICAL AND ARCHAEOLOGICAL SITES				✔		✔
10. DEMANDS ON ENVIRONMENTAL RESOURCES ON LAND, WATER, OR ENERGY				✔		

TABLE 4.2 - IMPACTS TO THE HUMAN ENVIRONMENT

HUMAN ENVIRONMENT	Major	Moderate	Minor	None	Unknown	Attached
1. SOCIAL STRUCTURES & MORES:				✔		
2. CULTURAL UNIQUENESS & DIVERSITY:				✔		
3. DENSITY & DISTRIBUTION OR POPULATION & HOUSING:				✔		
4. HUMAN HEALTH & SAFETY:				✔		✔
5. COMMUNITY & PERSONAL INCOME:				✔		
6. QUANTITY & DISTRIBUTION OF EMPLOYMENT:				✔		
7. LOCAL & STATE TAX BASE REVENUES:				✔		
8. DEMAND FOR GOVERNMENT SERVICES:			✔			✔
9. INDUSTRIAL, COMMERCIAL, & AGRICULTURAL ACTIVITIES & PRODUCTION:				✔		
10. ACCESS TO & QUALITY OF RECREATIONAL & WILDERNESS ACTIVITIES:				✔		
11. LOCALLY ADOPTED ENVIRONMENTAL PLANS & GOALS:				✔		
12. TRANSPORTATION:				✔		✔

SECTION 4.1 - POTENTIAL IMPACTS OF THE PROPOSED LAND APPLICATION SITE ON THE PHYSICAL ENVIRONMENT (See Table 4.1)

1.0 Terrestrial, Avian, and Aquatic Life and Habitats

There are no wetlands or permanent surface water bodies located on the proposed site. Because no continuously active aquatic systems exist within the boundary of the proposed site, it is unlikely that there is any significant aquatic life or habitat anywhere on the site. Therefore, the impact to aquatic species is none. An intensive survey was not performed to verify the presence of, or impact to, terrestrial or avian species within the land application site; because the site is actively used for farming and livestock grazing of pasture grasses. No additional impacts are anticipated

2.0 Water Quality, Quantity, and Distribution

Surface Water

The proposed application sites lie in the intermountain Alder valley. The prominent mountains in the area include the Tobacco Root Range to the east, the Highland Mountains to the north, and the Ruby Range to the south. The main drainages mapped on the United States Geological Survey (USGS) Beaverhead Rock NE MT 1:24,000 quadrangle are the Ruby River and Mill Creek. Generally, surface water drains from the surrounding mountains via the Ruby River, Mill Creek and the Beaverhead River to the north and west. The East Bench Canal transports surface water from the Beaverhead River and other smaller streams to agricultural land throughout the valley. The site is located on a bench approximately one mile west of the Ruby River, upstream of its confluence with the Beaverhead River.

There are no active surface water features within the boundaries of the areas proposed for land application. Natural surface water drainage from the area of Site 1 is to the west towards an ephemeral drainage. The natural surface water drainage from areas of Site 2 and 3 is to the east below the bench toward the Ruby River. Pumpings will not be applied to land within 150-feet of any state surface water feature, including ephemeral drainages and wetlands. Therefore, there is no anticipated impact to surface water resources from the proposed land application activity.

Groundwater

The local aquifer is hosted by locally-derived Tertiary and Quaternary-aged valley fill sediments. These deposits include alluvial fan material and younger river deposits, which are re-worked river channel sands and gravels. The older, deeper coarse-grained silt, sand and gravel formations are punctuated by volcanic ashfall beds that are reported in well logs as grey to white clay or bentonite. In many places the ash beds serve as hydraulic barriers locally in the relatively complex ground-water system. While there are significant differences in the host material and hydraulic characteristics of ground water from place to place, the valley-fill ground-water system as a whole may be treated as a single aquifer with significant hydraulic barriers reducing vertical migration. The aquifer in the immediate vicinity of the site is typical of the region. Ground water is contained within unconsolidated and partially consolidated silt, sand and gravel. Prominent features include strata and lenses of very fine-grained material of variable extent, prolific sand and gravel water-bearing zones, and zones of cemented sand and gravel in which water flow is controlled by fractures. In general, most of the water-bearing zones in the Beaverhead and Ruby River valleys are interconnected to some degree. As noted above, the entire system is considered to be a single aquifer on a regional scale, but contains fine-grained strata that clearly act as barriers to vertical flow. There appears to be good lateral flow through the horizontal beds.

Nearby Groundwater Supply Wells

The Montana Bureau of Mines and Geology, Groundwater Information Center (GWIC) database identifies 10 water wells within one and a half-mile of the site. Because the GWIC database locates wells by section, all wells in the sections containing the site and those surrounding the sites were included in this analysis (see Figure 4.1). Some of the wells shown on Figure 4.1 may be located greater than one-mile from the land application site.

Table 4.3 summarizes the well information by section. Because the data in GWIC is based on well drillers' records, the details are not field-verified for accuracy. Further, the GWIC database contains well information only for those drilling records that have been submitted; there may be additional wells in the area that are not contained in the database because the records have not been submitted to GWIC. Therefore, this analysis is based only on information contained in the GWIC database.

Section 1, in which the proposed site is located has one GWIC-documented stock water well. Section 6, located east of Section 1, has two GWIC-documented domestic wells and three GWIC-documented stock wells; Section 31, north of Section 6, has one GWIC-documented domestic well; Section 36, north of Section 1, has eight GWIC-documented domestic wells and one GWIC-documented stock well. Sections 2, 11 and 12 to the west, southwest and south, respectively, have ten wells; five are GWIC-documented domestic wells, four are GWIC-documented stock wells and there is one monitoring well drilled to monitor the East Bench Canal. These wells are not included in the summary table due to the distance of the wells from the proposed site.

The wells nearest to the land application sites are greater than 58 feet deep and have static water levels greater than 33 feet below ground surface. Pumpings will be land applied in a wide, thin, even layer at rate not exceeding the AAR, and will be incorporated into the soil surface plow layer within six-hours of application. As a result, there is no anticipated impact to groundwater or groundwater supply wells.

Figure 4.1: Location of Water Supply wells within 1.5 miles (Site property boundary outlined in red)

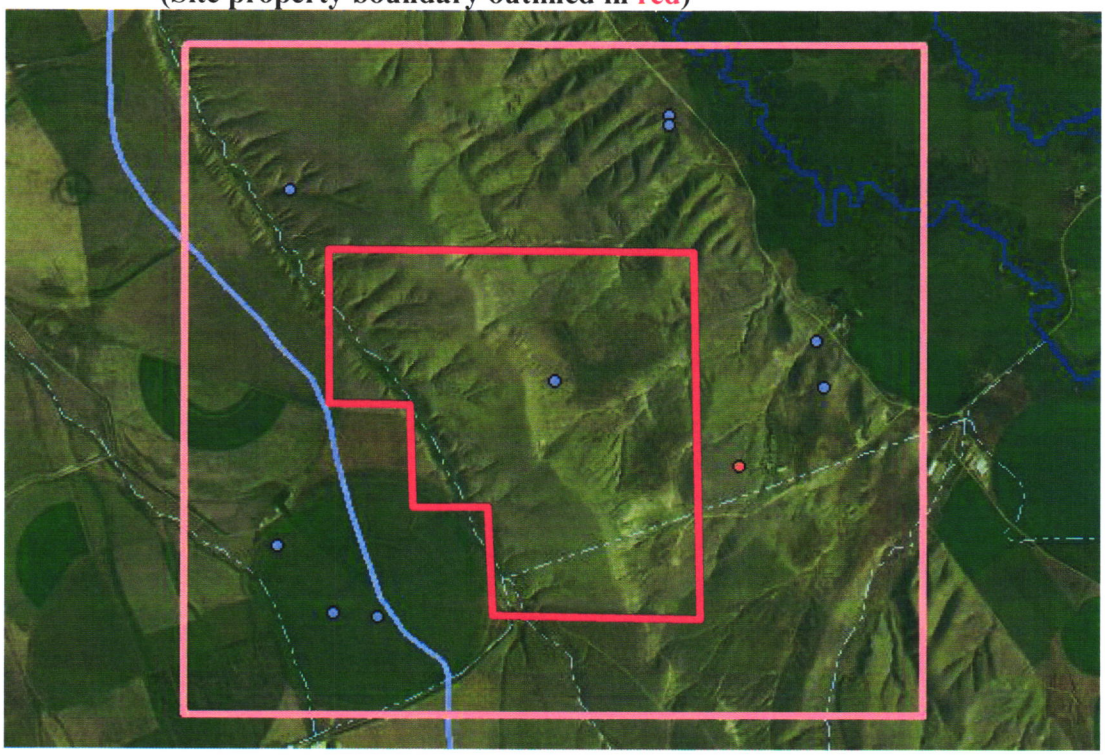


Table 4.3: Summary of Nearby Wells

Gwic Id	Township	Range	Section	Type	Total Depth	Static Water Level	Yield (gpm)	Date	Use
108475	05S	06W	1	WELL	380	335	10	1/1/1966	STOCKWATER
108443	05S	05W	6	WELL	50	30	20	1/1/1930	DOMESTIC
207967	05S	05W	6	WELL	163	149.79			
108444	05S	05W	6	WELL	58	33	20	1/1/1973	DOMESTIC
217021	05S	05W	6	WELL	400	273	30	12/28/2004	STOCKWATER
108445	05S	05W	6	WELL	70	50	5	1/1/1930	STOCKWATER
150164	05S	05W	6	WELL	82	70	18	10/18/1994	STOCKWATER
108001	04S	05W	31	WELL	38	4	18	1/1/1979	DOMESTIC
228996	04S	05W	36	WELL	110	7.5	35	7/25/2006	DOMESTIC
252241	04S	05W	36	WELL	100	8	25	7/20/2009	DOMESTIC
244366	04S	05W	36	WELL	100	16	20	4/14/2008	DOMESTIC
175035	04S	05W	36	WELL	58	19	35	10/7/1999	DOMESTIC
108020	04S	05W	36	WELL	36	4	20	1/1/1964	DOMESTIC
220388	04S	05W	36	WELL	260	82	12	8/5/2004	DOMESTIC
108021	04S	05W	36	WELL	48	15	20	1/1/1966	STOCKWATER
108023	04S	05W	36	WELL	25		15	1/1/1923	DOMESTIC
108022	04S	05W	36	WELL	42	10	20	10/15/1963	DOMESTIC

(Source: Montana Bureau of Mines and Geology, Ground Water Information Center)
The total depth column is the depth drilled, which may be deeper than the bottom of the well as completed. Static water level is the level of water measured in the well at the time of installation. Yield is the amount of water the well is expected to be capable of producing as reported by the well driller. All data is based upon driller's logs and may not be reported for every well.

3.0 Geology

The proposed land application site is located in the south portion of the Alder Valley in west central Madison County. The Alder Valley is bounded on the east by the Tobacco Root Mountains and on the western side by the Ruby Range and opens up to join the Ruby Valley on the north. The general topography of the area is characterized by mountains that surround the valley to the west, east, and south.

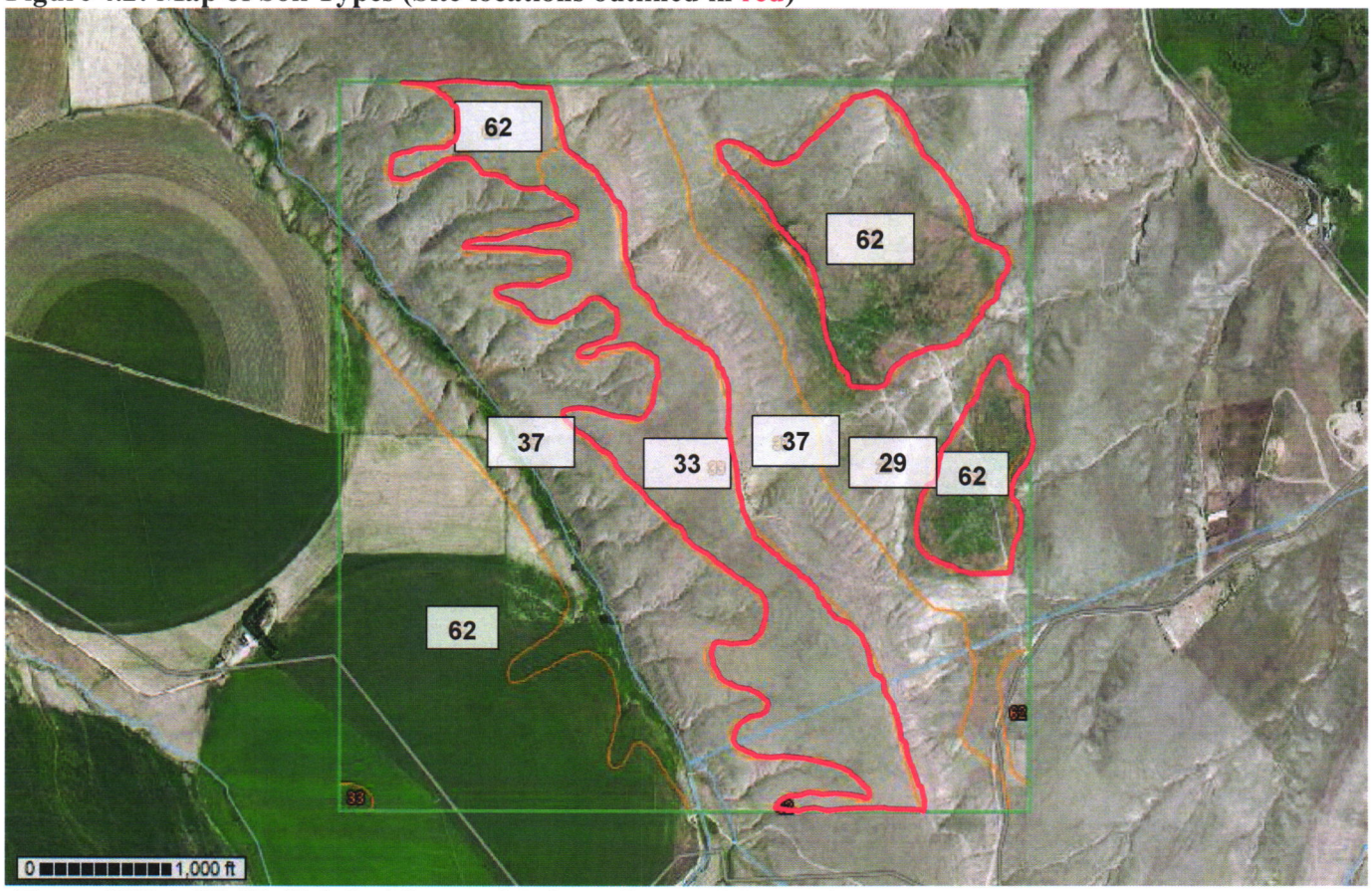
The Alder and Ruby Valley basins are filled with Tertiary basin fill alluvial deposits. Alluvium is the loose, unconsolidated sediments that have been eroded from upgradient areas and re-deposited by rivers and streams. Near Alder, the alluvial deposits are over 4,000 feet thick (MBMG, 1982). The bedrock that outcrops along the basin's borders consists of Pre-Cambrian metamorphic rocks, Paleozoic and Mesozoic sediments, Cretaceous-Tertiary intrusives and early Tertiary volcanics. This bedrock is generally less permeable than the unconsolidated alluvium. Because land application of septage is confined to the soil plow layer, there will be no impact to the geology in the area.

4.0 Soil Quality – Stability & Moisture

The areas proposed for land application within the 150-acre parcel are presented in Figure 4.2. As shown in the figure, the soil types within Section 1 consist as the Crago gravely loam, Crago-Scravo complex, Brocko-Crago complex and Kalsted sandy loam. One test pit was dug to eight feet to confirm the soil types at the site. The test pit confirmed that soils from the ground surface to four feet deep consisted of the Kalstead sandy loam; the soils from four to eight feet below the surface consisted of the Kalstead sandy gravely loam. The soils at the sites proposed for land application consist of the Kalsted sandy loam, 2-8% slopes, and Crago gravely loam, 0-8% slopes. The Kalsted sandy loam is comprised of a sandy loam and stratified loamy sand to gravelly sandy loam. The Kalsted soils are well-drained with a moderate water capacity and moderately-high to high permeability. Crago gravely loam soils

consist of a gravely loam to a very gravely sandy loam and are well-drained with a moderate available water capacity and moderately high permeability. All of the soils in the area have a depth to groundwater greater than 30 feet.

Figure 4.2: Map of Soil Types (Site locations outlined in red)



(From: USDA-NRCS, Web Soil Survey, Madison County, Montana)

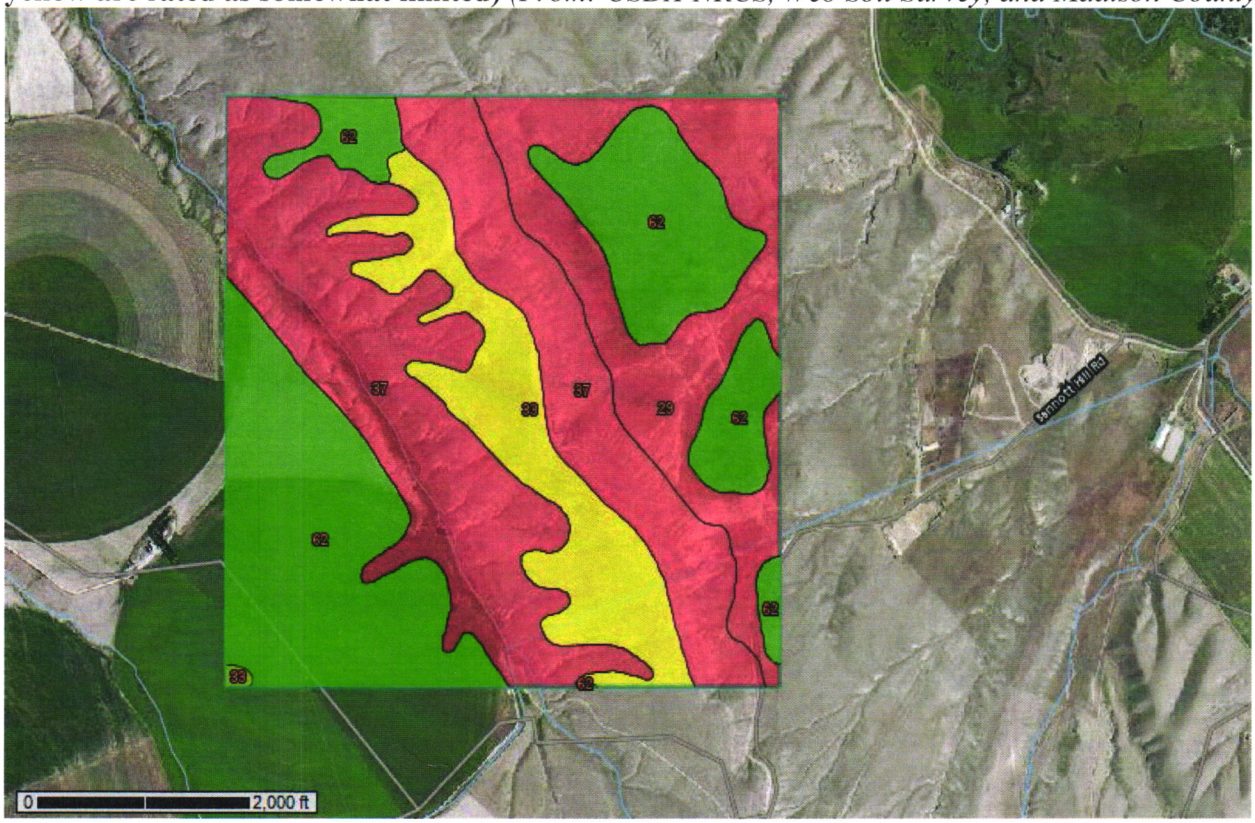
Soil Key (Figure 4.5)

33: Crago gravely loam , 0 to 8 percent slopes
62: Kalsted sandy loam, 2 to 8 percent slopes
37: Krago-Scravo complex , 15 to 45 percent slopes
29: Brocko-Crago complex, 8 to 45 percent slopes

The soil types in the areas proposed for land application site all have ratings from the Natural Resources Conservation Service (Figure 4.3) for land application of septage as "somewhat limited" (outlined in yellow) and "not limited" (outlined in green). The rating of "somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. A rating of "not limited" indicates that the soil has features that are very favorable for the specified use and thus good performance and very low maintenance can be expected. This rating is based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the rate and method by which the wastewater is applied. The rating takes into consideration the general values of the soil saturated hydraulic conductivity, depth to a water table, ponding, the soil sodium absorption ratio, the depth to bedrock or hardpan layer, available water capacity, salinity, and bulk density. The rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management.

The soil, pasture grasses, and wheat at the site will benefit from the land application of septage. The septage will increase the soil tilth and add organic matter and moisture. This impact will result in an increase in the production of the pasture grasses at the site from the added moisture and nutrients.

Figure 4.3: Map of Land Application Site NRCS Ratings (areas in green are rated as not limited, areas in yellow are rated as somewhat limited) *(From: USDA-NRCS, Web Soil Survey, and Madison County, Montana)*



5.0 Vegetation Cover, Quantity and Quality

The vegetative cover, quantity and quality of the land and its crops will be enhanced by the proposed activity. The land application of domestic septage provides benefits to agricultural land by the addition of organic matter, moisture and nutrients to the soil. As discussed in Section 4.0 above, will result in an increased production of grasses and crops at the site from the added moisture and nutrients.

6.0 Aesthetics

This site is located on property that is actively utilized for agricultural crop production and livestock grazing purposes. The application of septage is similar to the day to day activities of farming and ranching and will not cause a change in the aesthetics of the area.

8.0 Unique, Endangered, Fragile, Or Limited Environmental Resources

A search of the Montana Natural Heritage Program indicated the Little Brown Myotis, Great Blue Heron, Burrowing Owl, Ferruginous Hawk, Veery, Sage Thrasher, McCown's Longspur, and the Brewer's Sparrow are listed as species of concern. Designation as a species of concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to make proactive decisions regarding species conservation. There are no wetlands or permanent surface water bodies located on the proposed site. An intensive site survey was not conducted to verify the presence of, or impact to, sensitive, unique, endangered, or fragile species within or adjacent to the proposed land application site because the site is currently used for grazing and the active production of pasture grass. Due to the limited development and human population adjacent to the proposed site, there is adequate acreage of similar habitat available in the vicinity to accommodate any relocated species. Therefore, the impact to resources is minor.

9.0 Historical and Archaeological Site

A cultural resource file search was conducted for the sites. Records indicate there have been no previously recorded sites within the areas proposed for land application in the NE/4 of the NE/4 of the NE/4 of the SW/4, the SW/4 of the SW/4 of the NE/4, the NW/4 of the SE/4, the SW/4 of the SE/4, the SW/4 of the SE/4 of the SE/4, the SE/4 of the SE/4 of the NW/4, the N/2 of the SE/4 of the NW/4, the W/2 of the NE/4 of the NW/4, the SE/4 of the NE/4 of the NW/4, the NE/4 of the NW/4 of the NW/4, the E/2 of the NW/4 of the NW/4, the NE/4 of the NW/4 of the NW/4 of the NW/4, the E/2 of the NE/4 of the SE/4, and the N/2 of the SE/4 of the NE/4 of Section 1, Township 5 South, Range 6 West, Montana Principal Meridian, Madison County, Montana. The State Historic Preservation Office stated that there is a low likelihood cultural sites will be impacted and therefore a cultural resource inventory is unwarranted at this time. However, should cultural materials be inadvertently discovered during operations at this proposed site, the State Historic Preservation Office will be notified immediately.

SECTION 4.2 - POTENTIAL IMPACTS OF THE PROPOSED LAND APPLICATION SITE ON THE HUMAN ENVIRONMENT (See Table 4.2)

11.0 Human Health & Safety

The septage and graywater will be land applied at the site on an as needed basis. Pumpings will be land applied using a dispersive mechanism, consisting of either a spreader bar or a splash plate. The dispersive mechanism applies the waste in a wide, thin, even layer at a beneficial rate. Pumpings will be incorporated into the soil surface plow layer with a tractor and tillage equipment within six-hours of application. There are no additional health or safety concerns when the site is operated in accordance with the Septage Disposal regulations. Therefore, there are no anticipated impacts on human health and safety.

12.0 Demand for Government Services

The Madison County Sanitarian and DEQ Solid Waste Section will conduct periodic inspections at the site. There is a minor impact for demand for government services.

13.0 Transportation

The land application site will be accessed off Canal Road. Canal Road currently supports traffic to rural homes, farms and ranches. The site will be used on an as needed basis and will not cause a significant increase in traffic on Canal Road. There are no anticipated impacts to transportation.

SECTION 5.0 CONCLUSIONS AND RECOMMENDATIONS

Evaluation of mitigation, stipulations, and other controls enforceable by the agency or another government agency:
The proposed land application site and Operation and Maintenance (O&M) Plan will meet the requirements of the Montana Septage Disposal and Licensure Law, Air and Water Quality Acts, and other applicable Montana environmental laws and regulations, as well as county ordinances. Adherence to the regulations and the approved O&M Plan will mitigate the potential for harmful releases and impacts to human health and the environment by the proposed activity at the site.

Recommendation:
The DEQ's recommendation is to distribute the EA to adjacent landowners and interested persons to satisfy the public notification and participation requirements of MEPA.

Findings:
DEQ has determined that the proposed site, located on rural, private property, will have a minor impact on the surroundings. Access to the site will be controlled and all land applications will be performed according to the approved O&M Plan. Site activities will be verified by periodic inspections performed by DEQ and/or Madison County personnel to ensure that the potential risk of adverse effects on human health and the environment resulting from land application activities at the site are minimized. The significance of impacts associated with the proposed action does not warrant an Environmental Impact Statement. Therefore, an EA is the appropriate level of analysis. This treatment option is a beneficial reuse of a waste product.

Other groups or agencies contacted or which may have over-lapping jurisdiction:
Madison County Public Health Department

Individuals or groups contributing to this EA:
Ray Smail of South West Septic
Montana Natural Heritage Program
Montana Historical Society State Historic Preservation Office
Natural Resource Information System

References:
Western Regional Climate Center, 2215 Raggio Parkway, Reno NV 89512-1095
Montana Tech of the University of Montana, 2012, Montana Bureau of Mines and Geology, Groundwater Information Center, http://mbmggwic.mtech.edu/
United States Department of Agriculture, 2012, Natural Resources Conservation Service, Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

EA prepared by:
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Date: June 12, 2015